Crosswalk of Alaska NPS Fire Ecology Protocols to FFI Protocols

Contacts: Jennifer Barnes (jennifer_barnes@nps.gov) **Date:** 1/27/2020
Jennifer Hrobak (jennifer_hrobak@nps.gov)

Table 1 provides a crosswalk between protocols used by the AK NPS fire ecology program and those used in our FFI databases (AKWEST and AKRO). This table briefly describes what data are collected and how the data is entered in FFI. In some cases, AK data collection methods ***differ*** from those in the Fire Monitoring Handbook (NPS standard) and therefore will ***differ from typical FFI data entry standards used in the L-48***. AK specific FFI protocols have also been created.

Table 1. Crosswalk between AKR Fire & Fuels Monitoring protocols and FFI protocols.

AKR Protocol	FFI Protocol	Description
General Vegetation Information	Cover – Species Composition (metric)	Ocular estimate percent (%) vegetation & substrate cover.
Point Intercept	Cover – Points (metric)	Vegetation & substrate cover using standard point intercept method.
Tree Density Tally (Trees)	Density – Belts (metric)	Tree density. ALL live & dead trees (> 4.5 ft tall & > 45° angle from the ground) tallied by species, dbh size class and status within plot. Entered as Transect 1.
Tree Density Tally (Seedlings)	Density – Quadrats (metric)	Seedling density. ALL live & dead seedlings (< 4.5 ft tall) tallied by species and age class. Typically 3 quadrats per plot.
Tree Measurements	Trees – Individuals (metric)	***Two*** live trees of each species and size class are measured. **NOT** used for tree density.
Active Layer/Soils	SOILS	Depth to resistance (permafrost, seasonal frost or rock) in cm, surface fuel code (ground cover), and soil temperature at approx. 12cm depth (°C)
Burn Severity/Duff Consumption	Post Burn Severity (metric)	Burn severity (BS) codes (modified from NPS Fire Monitoring Handbook) used to estimate vegetation & substrate BS. UV fields used for pre & post fire pin measurements of duff consumptions.
Composite Burn Index (CBI)	CBI	Visual estimates of change caused by fire to surface features and vegetation strata. AK specific modifications in comments & UV fields.
Down Woody Debris & Duff Thickness (Down Woody)	Surface Fuels (metric)	Fuel Loading. Tally of down woody debris that intersects transect by size class (1-hr, 10-hr, 100-hr & 1000-hr).
Down Woody Debris & Duff Thickness (Duff Thickness)	Surface Fuels – Alaska Duff/Litter (metric)	Thickness (cm) of each forest floor layer (i.e., litter, lichen, live moss, dead moss, upper duff & lower duff) down to mineral soil. Typically 2 duff samples measured.
Shrub Density	Density – Belts (metric)	Tall shrub density. Tally of individual tall shrubs by species. Entered as Transect 2.

Detailed plot layouts, methods, and UV field usage can be found in the FFI databases for each project in the *Project Management* window → *Description* tab and for each macro plot in the *Project Management* window → *Metadata* tab. The AKR Fire and Fuel Monitoring protocols can be found in the following two documents:

- AKR Fire and Fuels Monitoring Protocol Belt Transect 2012 Final.pdf (unpublished)
- AKR Fire and Fuels Monitoring Protocol Circular Plot 2012 Final.pdf (unpublished)

Metadata on Crown Measurements for Alaska NPS FFI Datasets with Individual Tree Measurements Protocol

Since there are no clear definitions of many of the crown measurement fields for the *Individual Tree Measurement Protocol* within the FFI user guide, we have developed the use of the fields shown in Table 1 for our data collection methods for Alaska NPS fire ecology projects within FFI.

AKR NPS Individual Tree Measurement Protocol: Only ***2*** live trees (> 4.5 ft tall) of each species in each dbh size class observed with the plot are recorded. This protocol is **NOT** used for tree density. See *FFI Density Belts Protocol* for AKR NPS tree & shrub density.

IMPORTANT TO NOTE: FFI lists all of these fields with ***Meter*** as the unit. AKR field data is generally collected in cm and entered in FFI in meters. See Table 2 for a cross-walk of AKR field names to FFI field names and definitions.

Table 2. Cross-walk of Individual Tree Measurement protocol FFI field names and units to data collection methods for most NPS Alaska fire ecology projects in FFI.

FFI Field Name	AKR Field Name on Datasheets	AKR Field data collection definitions	FFI Units	AKR Protocol Units
Crown Radius	Crown Radius	Measure the crown radius in centimeters to the average widest branch or drip-line of the crown.	m	cm
Crown Fuel Base Height	Height to Dead Ladder Fuel	Measure the height in centimeters from the forest floor to the lowest point of dead branches.	m	cm
Ladder Fuel Base Height	Ht to Live Ladder Fuel	Measure the height in centimeters from the forest floor to the lowest point of live branches.	m	cm
Live Crown Base Height	Main Crown Base Height	Main live crown – measure the height in centimeters from the forest floor to the obvious main live crown.	m	cm